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| 10/509,134   | 05/26/2005  | Karl-Heinz Wilzer    | P/37-182            | 1953             |
| 2352 7590 12/18/2009<br>OSTROLENK FABER GERB & SOFFEN<br>1180 AVENUE OF THE AMERICAS<br>NEW YORK, NY 100368403 |             |                      |                     |                  |
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| LSTVOYB, GREGORY   |             |                      |                     |                  |
| ART UNIT   |             | PAPER NUMBER         |                     |                  |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/509,134

**Applicant(s)**

WILZER, KARL-HEINZ

**Examiner**

GREGORY LISTVOYB

**Art Unit**

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 August 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 8-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 8-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/CD)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 8-13, 15 and 17 rejected under 35 U.S.C. 102(b) as being anticipated by Wiltzer (US 6107449) (sited in the previous Office Action).

Wiltzer discloses a method for the continuous production of polyamide, starting with a material comprised of a salt of hexamethylenediamine with adipic acid (AH salt), water and lactam (see Claim 1, meeting the corresponding limitations of claims 8 and 12), which together form a prepolymer.

The method comprising:

a first stage wherein above atmospheric pressure is applied, in a first reactor having a first gas space, at temperatures between 180°C and 280°C (see Column 1, line 40), to the starting material, producing evaporated water containing reaction components, and, after passing the starting material through the first stage, feeding the prepolymer obtained due to the passage to at least one further stage comprising a second reactor (see column 1, line 65) having a second gas space and removing or expelling the evaporated water from the second gas space (see column 2, line 5), where connecting the first gas space with pressure control to the second gas space

(see column 2, line 55), such that water evaporated in the first stage, with reaction components contained therein, is passed into the at least one further stage, said water being expelled only in the at least one further stage (see claim 1).

Regarding claims 9, 13 and 17, Wiltzer discloses a reflux column, which separates monomers and water. Monomers return to the reactor, whereas water wasted with nitrogen stream (see Working Example 3).

In reference to claims 10 and 15, Wiltzer teaches 60-80% of AH-salt (see Claim 3) and particularly 80% AH salt (see Example 1).

Regarding claim 11, reflux column 19 (see Figure 1) operates at atmospheric pressure at 90C (see Examples 2-3).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 14 and 16 rejected under 35 U.S.C. 103(a) as being unpatentable over Wiltzer (necessitated by amendment).

Wiltzer discloses a method for the continuous production of copolyamide and polyamide (see discussion above).

Wiltzer teaches that water and reaction products are separated with reflux column, with following recycling of caprolactam back into a reactor.

Wiltzer does not teach that the temperature of the upper end of the column is less than 120C.

It is known that boiling point of water at atmospheric pressure is 100C. The other constituents of a vapor phase have much higher boiling point. Therefore, in order to effectively remove water, the temperature of the upper end of the column should be slightly above 100C (i.e. 105-110C). Higher temperature is unnecessary, since it leads to an additional energy consumption.

It would have been obvious to a person of ordinary skills of the art at the time the invention was made to set temperature of upper end of the reflux, column at 105-110C • to effectively remove water with efficient energy consumption.

Regarding Claim 14, Wiltzer does not teach that the amount of AH-salt is no more than 30%.

However, he teaches that the amount of comonomer caprolactam is within the range of 1-99% (see Column 3, line 55). It would have been obvious to a person of ordinary skills in the art that at high content of caprolactam monomer the amount of

comonomer AH-salt is low (i.e. lower than 30%) in order to keep constant total monomer concentration in the reaction mixture.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 8-17 rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 3 of U.S. Patent No. 6107449.

Although the conflicting claims are not identical, they are not patentably distinct from each other because the limitations of the above claims are within the scope of limitations of the U.S. Patent No. 6107449.

In particular, Claim 1 of the above patent claims a method for the continuous production of polyamides or copolyamides from the same ingredients as ones in the Application. Process takes place at high pressure within the same temperature range. Water is driven out with inert gas.

Claim 3 of the above patent claims the amount of AH-salt, which overlaps with the corresponding range of AH salt content in the Application examined.

Claims 8-17 directed to an invention not patentably distinct from claim 1 and 3 of commonly assigned U.S. Patent No. 6107449. Specifically, Claim 1 of the above patent claims a method for the continuous production of polyamides or copolyamides from the same ingredients as ones in the Application. Process takes place at high pressure within the same temperature range. Water is driven out with inert gas.

Claim 3 of the above patent claims the amount of AH-salt, which overlaps with the corresponding range of AH salt content in the Application examined.

The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP Chapter 2300). Commonly assigned U.S. Patent No. 6107449, discussed above, would form the basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly assigned case qualifies as prior art under 35 U.S.C. 102(e), (f) or (g) and the

conflicting inventions were not commonly owned at the time the invention in this application was made. In order for the examiner to resolve this issue, the assignee can, under 35 U.S.C. 103(c) and 37 CFR 1.78(c), either show that the conflicting inventions were commonly owned at the time the invention in this application was made, or name the prior inventor of the conflicting subject matter.

A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon the commonly assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications pending on or after December 10, 2004.

### ***Response to Arguments***

Applicant's arguments filed on 8/27/2009 have been fully considered but they are not persuasive.

Applicant argues that the reactors (8) and (11) of the Wiltzer patent are combined into one reactor in the present invention (i.e., reactor (2), wherein pressures and temperatures similar to that of the first pressure step in reactor (8) are used, but with the driving-off of water performed as with the second pressure reactor (11) of the Wiltzer patent. In other words, Applicant submits that in contrary to Wiltzer, water is expelled in the first step of the process.

Examiner disagrees. Claim 8 claims "water evaporated into first gas space of the first stage". Therefore, Wiltzer process, which discloses gas space in the first reactor

and some water presented in the gas space over the reaction mixture at 180-280C meet the above claim limitations.

Applicant argues that the second reactor (11) of the Wiltzer's patent has means (12, 13, 14) for driving-off water from the gas space thereof, but again, that gas space does not have any connection to the gas space of a subsequent stage or reactor (which would be reactor (17) in the Wiltzer's patent). This subsequent reactor (17) of the Wiltzer's patent is comparable to reactor (5) of the present application.

Examiner disagrees. When reaction mixture evacuates from step 1, the content of the gas phase is also transfers to step 2.

Applicant argues that in contrary to the Application examined method, excess of water in the second stage of the Wiltzer's reference is removed.

However, claim language of claim 8 does not required that all the water returns to the gas space of the reaction.

Applicant notes a drying section as described in the Wiltzer patent is completely different from a pressure reactor as per the Wiltzer patent, in that a drying section is simply a heat exchanger, without any pressure control per se, and without a gas space for separating and collecting water vapor from the melt.

However, the distinguishing features above are not clearly claimed.

Applicant does not have arguments regarding rejection under 35 USC 103(a).

Applicants arguments regarding Double Patenting are essentially the same as ones for rejection under 35 USC 102(b).

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GREGORY LISTVOYB whose telephone number is (571)272-6105. The examiner can normally be reached on 10am-7pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/James J. Seidleck/  
Supervisory Patent Examiner, Art Unit 1796  
GL